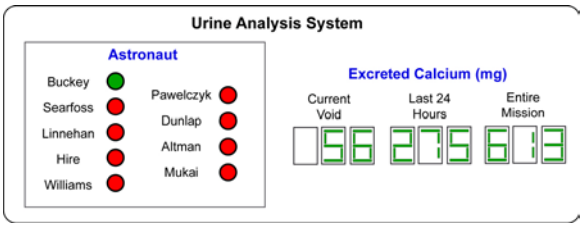
BRIEFING CHART

Identification and Significance of Innovation

- Development of an automated, real-time system for measurement of calcium loss during spaceflight
- "One-button" measurement of urinary calcium loss on a daily basis allows determination of the need for prophylactic measures
- Monitor effectiveness of prophylactic measures during the mission



Technical Objectives

- Construct prototype system and evaluate accuracy using urine samples with known calcium concentration
- Determine the ability of the system to make accurate measurements on samples containing small bubbles
- Develop spaceflight system with miniaturized hardware and dedicated electronics

Work Plan

- Develop a laboratory prototype to determine the accuracy of the approach
- Develop a hardware design for the fully automated system to be constructed in Phase II

NASA Applications

- Improved astronaut health monitoring via measurement of excreted urinary calcium during spaceflight

Non-NASA Applications

- Monitoring of calcium loss in patients suffering osteoporosis – a condition affecting more than 14 million American women over age 50

Contact

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